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## United States Patent [19]

## Striffler

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[54]	APPARATUS AND METHOD OF
	TRANSMITTING DATA OVER A COAXIAL
	CABLE IN A NOISY ENVIRONMENT

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**U.S. Cl.** ...... **375/260**; 375/275; 375/303

..... 375/260, 271, Field of Search .....

375/272, 273, 275, 276, 278, 279–281, 284, 285, 295, 302–308, 329, 332, 334,

335, 257

**References Cited** [56]

U.S. PATENT DOCUMENTS

4,783,779 11/1988 Takahata et al. ...... 455/17

5,170,413	12/1992	Hess et al	375/260
5,243,629	9/1993	Wei	375/260
5,497,397	3/1996	Hershery et al	375/259

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**ABSTRACT** [57]

An apparatus and method of transmitting digital data over a coaxial cable in a noisy environment using several carriers with narrower bandwidths in place of the single carrier with a wide bandwidth. In a frequency spectrum, these several carriers are located between interfering harmonic and spurious noise frequencies generated by the other signals. an particularly clock signals. These narrow signals are then combined for transmission over a cable, substantially reducing noise in the signal recovered at the receiving end.

## 9 Claims, 3 Drawing Sheets

